

*AMENDMENTS TO THE CLAIMS*

This listing of claims replaces all prior versions, and listings, of claims in the application.

Claims 1-10 (Canceled).

11. (New) A method of manufacturing a polycrystalline silicon film by crystallizing a silicon film, the method comprising:

forming a silicon film on a support;

simultaneously irradiating a first irradiated region on the silicon film with pulsed visible laser light focused to have a linear shape, and a second irradiated region on the silicon film, partially overlapping the first irradiated region, with pulsed ultraviolet laser light;

moving the support relative to the visible and ultraviolet laser light in a movement direction perpendicular to a longitudinal direction of the linear shape of the pulsed visible laser light, wherein a part of the first irradiated region precedes the second irradiated region along the movement direction; and

repeating simultaneously irradiating the first and second irradiated regions and moving the support relative to the visible and ultraviolet laser light so that regions subsequently irradiated overlap regions previously irradiated along the movement direction.

12. (New) The method of manufacturing a polycrystalline silicon film according to claim 11, wherein a part of the second irradiated region succeeds the first irradiated region along the movement direction.

13. (New) The method of manufacturing a polycrystalline silicon film according to claim 11 including producing laser light with an Nd:YAG laser, producing a second harmonic of the laser light as the pulsed visible laser light, and

producing a higher harmonic of the laser light, the higher harmonic having a wavelength shorter than the wavelength of the second harmonic, as the pulsed ultraviolet laser light.

14. (New) A method of manufacturing a polycrystalline silicon film by crystallizing a silicon film, the method comprising:

forming a silicon film on a support;

irradiating a first irradiated region on the silicon film with pulsed visible laser light focused to have a linear shape;

irradiating a second irradiated region on the silicon film, partially overlapping the first irradiated region, with pulsed ultraviolet laser light;

moving the support relative to the visible and ultraviolet laser light in a movement direction perpendicular to a longitudinal direction of the linear shape of the pulsed visible laser light, wherein a part of the first irradiated region precedes the second irradiated region along the movement direction; and

repeating irradiating the second irradiated region, irradiating the first irradiated region, and moving the support relative to the visible and ultraviolet laser light, in this order, sequentially, so that regions subsequently irradiated overlap regions previously irradiated along the movement direction.

15. (New) The method of manufacturing a polycrystalline silicon film according to claim 14, wherein a part of the second irradiated region succeeds the first irradiated region along the movement direction.

16. (New) The method of manufacturing a polycrystalline silicon film according to claim 14 including producing laser light with an Nd:YAG laser, producing a second harmonic of the laser light as the pulsed visible laser light, and producing a higher harmonic of the laser light, the higher harmonic having a wavelength shorter than the wavelength of the second harmonic, as the pulsed ultraviolet laser light.

17. (New) An apparatus for manufacturing a polycrystalline silicon film by crystallizing a silicon film, the apparatus comprising:

a source of pulsed visible laser light;

a focusing unit for focusing the pulsed visible laser light into a linear shape irradiating a first irradiated region on the silicon film, the first irradiated region being displaced with time relative to the pulsed visible laser light so that a first irradiated region irradiated later in time partially overlaps, along a movement direction perpendicular to a longitudinal direction of the linear shape, a first irradiated region irradiated earlier in time; and

a source of pulsed ultraviolet laser light, the pulsed ultraviolet laser light irradiating a second irradiated region on the silicon film, the second irradiated region partially overlapping the first irradiated region, while or before the pulsed visible laser light irradiates the first irradiated region.

18. (New) The apparatus for manufacturing a polycrystalline silicon film according to claim 17 comprising a moving unit for moving the silicon film relative to the visible laser light and the ultraviolet laser light along the movement direction so that a part of the first irradiated region precedes the second irradiated region along the movement direction.

19. (New) The apparatus for manufacturing a polycrystalline silicon film according to claim 17, wherein said source of pulsed visible laser light and said source of pulsed ultraviolet laser light comprises a single Nd:YAG laser, and a harmonic generating unit generating as the pulsed visible laser light a second harmonic of laser light produced by the Nd:YAG laser and producing as the pulsed ultraviolet laser light a higher harmonic of the laser light produced by the Nd:YAG laser.

20. (New) The apparatus for manufacturing a polycrystalline silicon film according to claim 17, comprising:

a laser light transmitting unit transmitting the pulsed visible laser light and the pulsed ultraviolet laser light on a common optical axis; and

prisms arranged symmetrically with respect to the optical axis to differentiate angles of the pulsed visible laser light and of the pulsed ultraviolet laser light in the laser light transmitting unit.

21. (New) A method of manufacturing a semiconductor device comprising the method of manufacturing a polycrystalline silicon film according to claim 11.

22. (New) A method of manufacturing a thin-film transistor comprising:  
manufacturing a polycrystalline silicon film according to claim 11, wherein the support is electrically insulating and including forming a base film on the support before forming the silicon film so that the base film is interposed between the support and the silicon film;

    patterning the polycrystalline film into in a island on the support;

    forming a gate insulating film covering the island of the polycrystalline silicon film;

    forming a gate electrode on the gate insulating film;

    forming an interlayer insulating on the gate insulating film, covering the gate electrode; and

    forming a source electrode and a drain electrode for connection to the island of the polycrystalline silicon film.